Hudson Bay & North West Rly Co.

Confidential

INTRODUCTORY

O. H. Compliments of
Wm. T. Lawrence

Momentous Announcement

A SPECIAL bond of union now attainable between the Home centre of the British Empire and its most important Colony, with inestimable advantages, under judicious management, to accrue to Great Britain and to Canada.

Among the benefits to the "Mother Country" are:

FIRST.—Commercial access to the best and largest wheat producing region on the North American Continent, and as to quality, yielding the highest grade in the world.

SECOND.—Such access can be developed over the shortest sea distance for grain transit to Liverpool or adjacent insular Ports.

THIRD.—Such transit is by the safest of any line of food importation from over-seas to the British Islands, because the easiest for naval protection.

FOURTH.—Such food supplies can be conveyed more cheaply from the Canadian producer to British consumer by the transit system herein set forth than by any other, present or prospective.

The reflex advantages to the eldest Colonial daughter, as Canada can be very properly designated, will be, in some of their main features paragraphically noted as follows:

A.—An unequalled opportunity for securing the most desirable class of colonists to control the formative stages of the moral, social and industrial conditions in the heart of the great Dominion, as the immense Mackenzie Basin must eventually become when the millions of in-coming settlers and their descendants in later generations have occupied its vast areas with the contiguous territories naturally tributary to it.

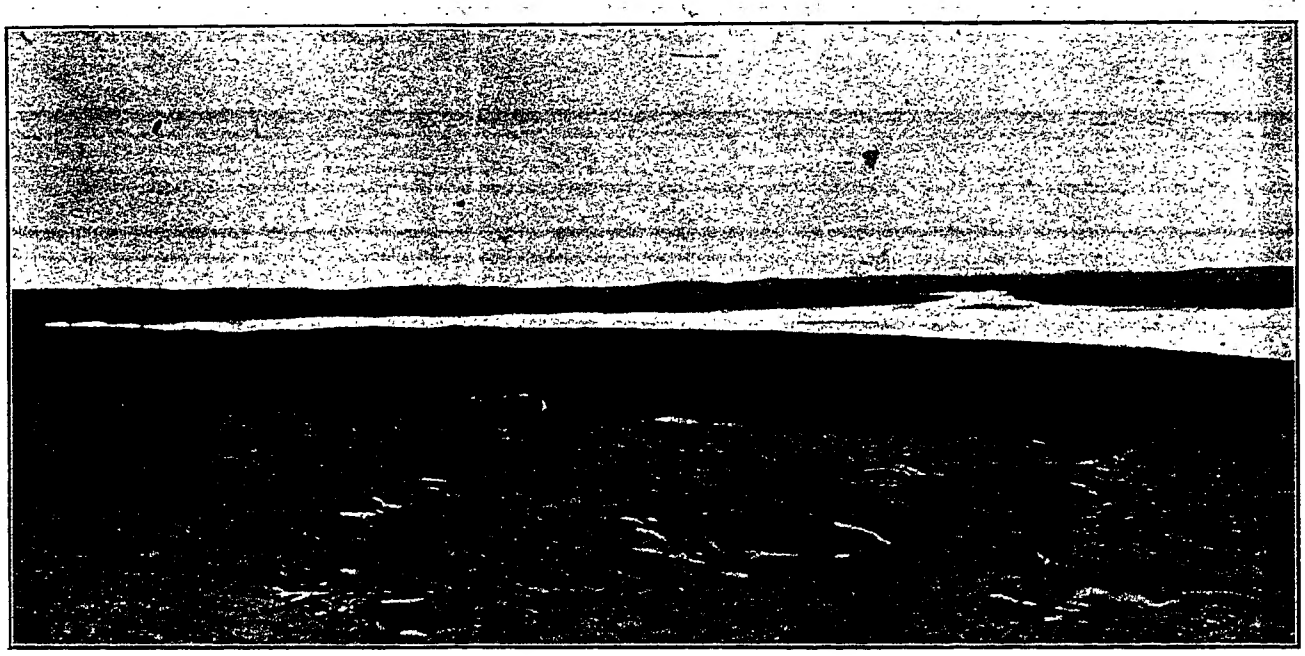
B.—The inauguration of a combined system of rail and water-way transit, authorized by the special Dominion charters hereinafter referred to, which will hasten the general prosperity of North Western Canada more than any other new transportation lines at present projected, not excepting certain proposed trans-continental railway routes, involving many times greater construction cost.

C.—The introduction of new methods for encouraging the investment of capital in aiding colonists when most helpful to them, with liberal interest earnings theron, for the mutual advantage of both borrowers and lenders.

BUSINESS STATEMENT

GREAT NORTHERN GRAIN ROUTE.

The Hudson Bay and North West Railways Company proposes to exercise its charter powers in proceeding to establish commercial access from a deep water ocean steamer terminal in Chesterfield Inlet, including Baker Lake, by a "railway car ferry," barge and river steamer line, running to and along the Thelon River, to the point known as the "Forks," to which large river craft can pass in a sufficiently deep and broad channel, without obstruction, a distance of about 300 miles to the "divido" rail-



Forks of Thelon River. North Branch Seen in Distance Northward. Photo by J. W. Tyrrell.

way landing, whence the cars will be run as ordinary railway trains about 200 miles to a deep-water terminal on Great Slave Lake. There the cars will be transferred to the Western barge and steamer line, reaching to the eastern section of the "premium wheat lands," bordering on, or between, the Peace and Liard Rivers, and the adjacent great Lakes for an average distance of about 500 miles, thus making the length of transit between the eastern premium grain fields, and the ocean steamers' port within 1,000 miles, of which four-fifths will be by water, at a minimum of cost, and only twenty per cent. or 200 miles by rail. No rehandling will be required, as the grain once loaded in cars at the barge landings adjoining the wheat fields, can pass directly into the ocean steamer's hold or to dock elevators pending shipment.

The voyage from the Inlet to Liverpool is 2,800 miles against 2,840 miles from Montreal and 3,130 from New York.

FREIGHT RATES.

For the interior transit, a charge on wheat of twelve cents per bushel, or $4 per net ton will afford satisfactory returns for the transportation, averaging 1,000 miles, which has been the rate on the C.P.R. from Winnipeg to Fort William, a distance of 427 miles, and when the rate from interior points to Winnipeg and from Fort William to the seaboard is added,* a heavy percentage of additional cost must accrue, which the great northern route will largely avoid, and hence it can be safely assumed to be *the cheapest route for grain export from North Western Canada.* It can also be assumed that the ocean rates will not be materially greater than by other competitive routes, and as the return passenger and merchandise traffic increases, the shorter time required on the most direct trans-oceanic route which it will occupy, will doubtless warrant the lowest trans-Atlantic grain rates.

With its natural advantages from its mainly waterway transit system, this route evidently can in due time afford the lowest rate of grain transportation from the wheat producer in Canada, to the bread consumer in Great Britain, and consequently its traffic development must be rapid and eventually immense.

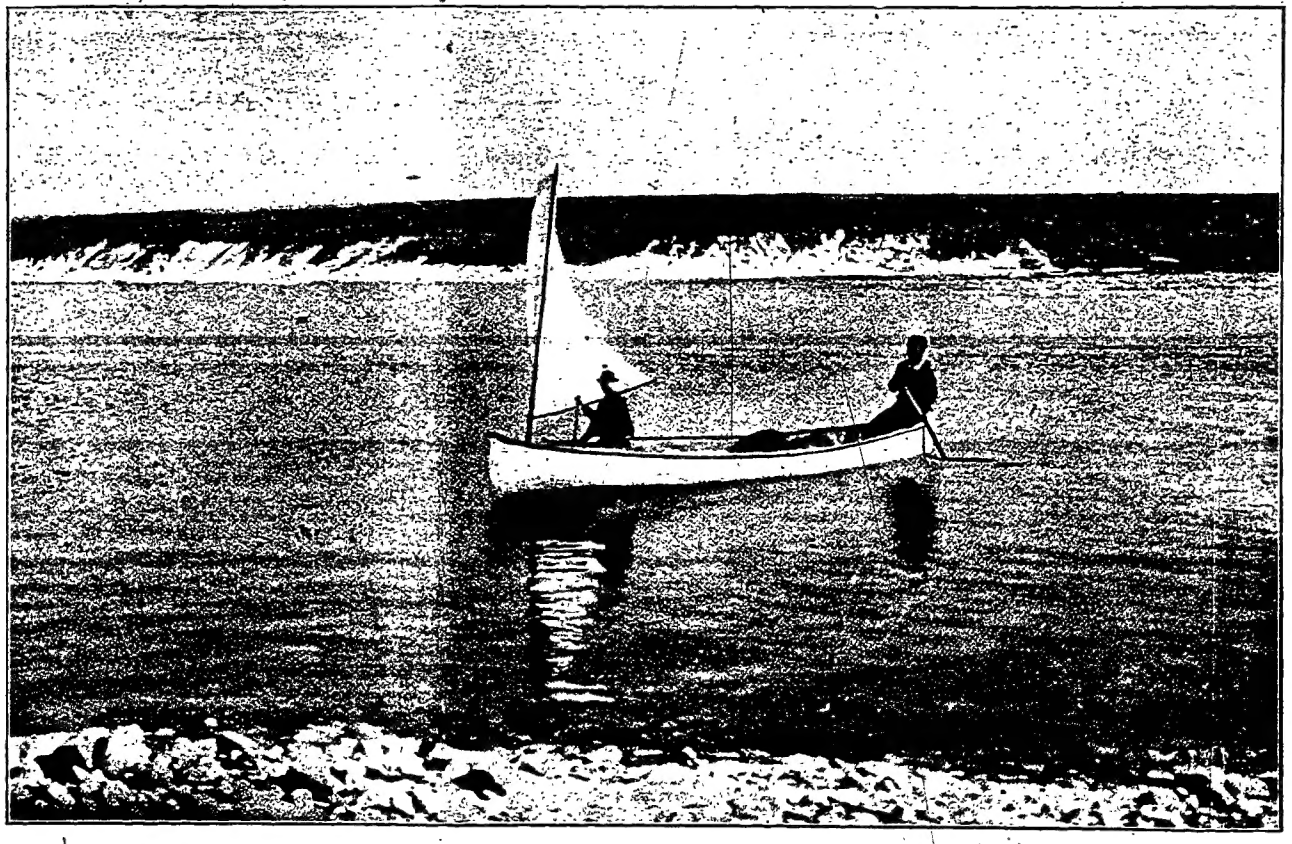
SURVEYS.

In 1898 the chief engineer of this company made a reconnaisance of the southernmost section of the Great Mackenzie

*The Edmonton Bulletin of January 27, 1905, quotes the railway rate on wheat from there to Fort William or Lake Superior at 18 cents per bushel.

Basin in the vicinity of the Athabasca River, going from Edmonton to Athabasca Landing by hired wagon conveyance and thence along the river by boat.

By seeking the independant fur traders who were at that time coming south to dispose of their annual "catches," and of others who had been actual residents of the north country, he collected a mass of valuable information which led the company to conclude that the most practicable route for gaining ample and economical commercial access to the vast Mackenzie Basin was eastward from Great Slave Lake to Hudson Bay, a conclusion which later information up to this date abundantly confirms.



Thelon River Eastward of the Forks.

Photo by J. W. Tyrrell.

Measures were then instituted to secure a Government preliminary survey of the line, and in 1899 preparations for the same were commenced under the directions of J. W. Tyrrell, C.E., D.L.S., one of the most eminent explorers and surveyors in the Dominion and the following year, was prosecuted to completion by him with energy and success.

Extracts from his official report will be found on the following pages, but in a condensed summary it can be stated that he passed from Great Slave Lake to the Forks of the Thelon River and found the divide section a favorable one for railway construction, having no mountain ranges, with the highest elevation only about 700 feet, over 100 miles east of the lake, or averaging less than 7 feet to the mile.

Continuing his examination, along the Thelon River, he found it eastward of the Forks to be about one-fourth of a mile wide with 5 feet depth in its channel at the low summer level. His admiration of the waterway which he reports as "one of the finest in Canada" is proved to be well founded from the photographic view here presented.

Eastward he found the river growing broader and deeper, until reaching a succession of broad and deep lakes ending at Baker Lake, which is practically an extension of Chesterfield Inlet, with deep channels around the island at its eastern end, which gives the western section the appearance of being a lake, but should not be thus designated as it is simply a continuation of an estuary of the great Canadian sea (as Hudson Bay should be properly named) in which the tides flow as elsewhere.

Surveyor Tyrrell sums up the results of his labors in reporting "the discovery of the Thelon River one of the finest in Canada," navigable from the Forks to Baker Lake, and by ocean steamers thence to Hudson Bay. Two rapids were found on the river above Baker Lake where some improvements of the channel might be made.* The report is acccompanied by a very creditable map some 30 feet in length of which this company has a mounted duplicate which can be used as a navigators chart until further surveys are made. Tyrrell's report on next page shows the river to be far more favorable for navigation than the Ohio river (U.S.), on which tens of millions of freight in barges pass annually. There the summer minimum depth is only two feet.

* The features of these have been described to the company's engineers and the opinion expressed that no serious impediment exists, and all desirable improvements can be readily and cheaply made.

TRANS-ATLANTIC ROUTE.

BETWEEN CHESTERFIELD INLET AND LIVERPOOL.

Hudson Bay is a vast inland sea extending over 1,000 miles north and south (or over 1,300 miles including Fox Channel) by 600 miles east and west, presenting an area more than five times greater than the five great lakes of the St. Lawrence Basin combined, and which like the ocean is navigable at all seasons of the year, only its inshore ports and estuaries being closed by ice during the winter.

Obstructions from ice "floes" and "bergs" however occur in Hudson Straits through its connection with Fox Channel,

HAMILTON, ONT., August 30, 1901.

*E. DEVILLE, ESQ.,
Surveyor General, Department of Interior,
Ottawa, Canada.

SIR,—Herewith I have the honor to submit the report of my exploratory survey of 1900, extending from Great Slave Lake to Hudson Bay, in the districts of Mackenzie and Keewatin.

INTRODUCTORY.

In accordance with your instructions, dated January 20, 1900, I have made an exploration of the country between Great Slave Lake and Hudson Bay in the districts of Mackenzie and Keewatin, and have now prepared a large map comprising twenty-two sheets, 40 x 32 inches, on a scale of one inch to one statute mile, of the routes covered by our expedition. * * *

At Old Fort Reliance the magnetic variation was ascertained to be 37° 15′ east, Back having found it to be 35° 19′ east in 1834.

Old Fort Reliance is no more a fort, but a ruin, yet the site is one of the loveliest I have ever seen in the north. It was well chosen by Back for the establishment of winter quarters. Five stone chimneys only now remain of what were 66 years ago three substantial buildings, the bare outlines of which can scarcely now be traced on the ground.

They were situated on a lovely level green terrace about 20 feet above the harbor and 200 feet from the shore. The main building which contained three of the great chimneys and five open fireplaces, measured 50 by 30 feet, and was divided into five rooms, with a fireplace in each room. Two small building 18 feet square, and situated a little to one side, appear to have completed the fort.

Back of the buildings the land rises in regular and beautiful terraces to a considerable elevation. These are thinly wooded with young white spruce trees, between which, in many places, the ground is covered with cranberries and blueberries.

Here and there are to be seen the charred remains of large stumps, indicating the comparatively recent destruction of the original forest, as well as offering an explanation for the disappearance of the old fort.

The largest young trees, which showed 34 or 35 years growth, were from 4 to 6 inches in diameter 2 feet from the ground, and were not of stunted appearance.

One of the most striking features of this lovely natural park, is the occurrence of numerous broad, winding, well-beaten roadways, leading from nowhere to nowhere.

Upon inspection, not a wheel or even shoe mark can be detected, but only innumerable tracks of the caribou, occasionally followed by that of a prowling timber wolf. * * *

THELON RIVER.

This fine stream was reached by us on the morning of July 7th, about midsummer. No snow or ice was anywhere to be seen, and the river had fallen, apparently, to somewhere near low water mark.

Opposite the first grove of spruce, about two miles below the junction (of the north and the south branches of the river), where we made camp, some measurements of the Thelon were made, from which the volume of flow at the time was found to be over 50,000 cubic feet per second. The width of the stream measured 1,227 feet, depth of channel 5 feet, and velocity 3½ miles an hour. These measurements being taken near the Forks, show a less depth but greater width than exists at most parts.

Eight miles farther downstream soundings were taken, showing a depth of 14 feet in mid-channel. At this point well grown spruce trees were plentiful on both banks. * * *

About 30 and 32 miles below the Forks two slight rapids occur where ridges of rocks project into the stream, but they are so slight as not to interfere with navigation of the river either by canoe or large river boats. Here, and for many miles below the Thelon is a really fine and beautiful river, having grassy banks well wooded in places by spruce trees some of which measured 15 inches in diameter. * * *

Nothing of a mountainous character was found in the "divide" country, and the greatest elevation to be crossed was the heights of land 115 miles from Great Slave Lake and 714 feet above it. * * *

Just what length of time this route may be open for navigation I am unable to say precisely, but judge that the river portion must be open at least five months and the inlets and larger portions about a month less, or, during the months of July, August, September and October. * * *

Should any kind of electric transmission become desirable, the two grand water powers of the Lockhart River and Dickson Canyon could be utilized to great advantage during the open season. * * * The chief food supply of the country lies in its great bands of caribou-deer and its fish of various kinds which are abundant in all the lakes and streams of the district. * * *

The Thelon valley, though affording fine grazing lands for musk oxen and carabou, can hardly be looked upon as a desirable agricultural district, although I judge from the growth and great variety of plants observed there, that some of our cereals and most of our hardy vegetables could be grown in the Thelon Valley. * * *

I have the honor to be,

Your obedient servant,

J. W. TYRRELL, D.L.S.

J. W. TYRRELL, C.E., D.L.S., 1905.

and likewise in Davis Straits from Baffins Bay. Investigations as to the time and extent of these obstructions have been made by the Dominion Government during the last two decades. In 1884 it sent Lieutenant Gordon, R.N., an officer of ability and experience, with a steamer to ascertain the conditions of navigation in those straits. He made a round trip from Halifax to the west coast of Hudson Bay at Chesterfield Inlet, entering the Straits August 5 and leaving the same September 29 for St. John, Newfoundland.

In 1885 he made another voyage, entering the Straits August 4, and proceeding to Ashe Inlet on Big Island near the middle of the Straits (see map), where he established an observation station and, placed it in charge of J. W. Tyrrell, C.E., the since famous explorer and surveyor, who remained there until called for the next year. Gordon left the Straits October 7 and wintered at Halifax.

In 1886 he made a third trip, entered the Straits July 9, arrived at Ashe Inlet the 11th, finding Inspector Tyrrell and party well, and taking them on board, sailed westward, found ice coming from Fox Channel, but after passing that and reaching the Bay, found it entirely free, and made the run of 600 miles to Port Churchill direct in 42 hours. After making a survey of the harbor there and of the entrance to Nelson River, also at Marble Island near Chesterfield Inlet, with surveys of the coasts of Southampton Island, and the north side of the Straits until leaving them for Halifax, September 29, no ice worthy of mention having been seen in these extensive surveys during the months of August and September. [For extracts from his Reports see Note A.]

In 1897 the government fitted out another expedition, in charge of William Wakeman, an attache of the Fisheries and Marine Department, to ascertain more definitely the length of the season of Straits navigation. He was furnished with a small steamer of 473 tons with an engine of only 70 h.p., attaining a maximum speed of but 8 miles per hour. With this inferior outfit he made four round trips through the Straits during that season, between June 23 and October 30, inclusive, extending one to Port Churchill on the west coast of Hudson Bay and another to Port Chimo south of Ungava Bay (see map 1). The most remarkable incident, was that finding his vessel not powerful enough to cope with a gale from the westward at the entrance of Hudson Bay on October 29th, he turned about and ran before it, passing through the entire length of the Straits in 28 hours, noting at the time, "*it is not ice or cold that is bothering us, but constant strong winds and the snow*" (squalls). [For extracts from his Report see Note B.] When the lack of steam power in his vessel is considered, the wonder is that he was not more "bothered" with adverse winds and tides. His success is of itself a certificate of the favorable conditions for navigation in the Straits.

In 1903, the government sent the latest expedition in a suitable steamer under command of the veteran surveyor and geographer A. P. Low of the Geological Department. He returned in December, 1904, and while his report to the government has not been as yet published, he has unofficially stated in private letters and public lectures the main points of the information gained. His instructions from the government referred mainly to taking formal possession for the Dominion of the regions along the west coast of Baffins Bay which led him as far north as Devon Island, but he passed through Hudson Straits in September, wintered at Cape Fullerton, north of Chesterfield Islet, which he also examined and found it to be navigable for the largest ocean steamers to the western end of Baker Lake at the entrance of Thelon River. In July, 1904 he passed eastward, on a trip to Baffins Land, returned westward early in September, and again eastward, leaving the Straits October 1st for Halifax. On all these trips no ice was seen in the Straits nor was any delay caused by bad weather.

His conclusions respecting navigation in Hudson Straits were, that while it might be available for suitable steamers for one or two months longer, there was an open season from the middle of July to the first of November, when it was quite safe for all kinds of vessels, sail or steam, and more surely navigated than the St. Lawrence route to Montreal. This was a most important fact because it disproved the theory that the commerce of Hudson Bay would require a peculiar style of steamer to overcome ice obstructions which must remain idle at least half the year. There was ample time he said for what are known as "tramp steamers" to be chartered in sufficient numbers to move an immense amount of grain when sufficient terminal facilities were provided for handling the same as at other more southern ports.

This opinion is fully coroborated by that of J. W. Tyrrell, after spending an entire winter at the station on Ashe Inlet near the middle of the Straits as before mentioned. He estimated the average length of open navigation in the Straits at five months or from early in July until early in December [see Note D]. One additional fact should be mentioned, that while Tyrrell was at Ashe Inlet the whaling steamer Artic arrived there June 5, 1886, from Dundee with no detention from ice at that time.

Attention is called to the statement of Commander Wakeman (see Note C page 5) that Sir William Thompson's invention of the "compensating compass" overcame previous navigating difficulties created by the variation of the magnetic needle which in that region became utterly unreliable.

This improvement will no doubt be equalled in utility by the introduction of the Marconi wireless telegraphy system between steamers passing through the Straits during fogs and snow storms, and lightship and land stations along the shores, practically adding from one to two months to the season of safe navigation therein, especially by transmitting information enabling captains to avoid the vicinity of "ice floes."*

*As the passages from the northern ice-berg seas via Fox Channel and Davis Straits into Hudson Straits are quite narrow, it follows that "floes" coming through them will not cover the latters area entirely, but leave wide spaces in which vessels can go around them without danger of being "nipped." The winds and tides (the latter having nearly 30 feet fall at Butten Islands) are the controlling factors, and when a northerly wind sends the ice floes to the south shore the north coast is comparatively free and *vice versa*. With a series of stations made on both sides of the Straits and at the entrances, information as to open and closed areas can be sent to steamers *en route* and much time and risks saved.

A glance at the accompanying map of the sailing route through Hudson Bay and Straits, will prove that there is an ideal channel of from 50 to 100 miles wide through to the ocean entrance at Button Islands, (which is about 30 miles in width). No midway shoals or reefs exist therein but a uniform depth of about 150 fathoms. Its superiority in these respects to the St. Lawrence-Montreal route has been remarked by navigators herein named and others, but for the sake of brevity further mention is omitted.

ROUTE DISTANCES AND TIME.

The approximate distances on the eastern or ocean steamers section of the route are:

From Liverpool to Hudson Straits	1900 miles	
Through the Straits to Hudson Bay air line	425 "	
Across the Bay to Chesterfield Inlet air line	475 "	
Along Inlet and Lake to Thelon River docking terminal	220 "	
		3,020

On the western section the distances are:

Via Thelon River 275 miles; Connecting Lakes 118 miles	393 miles	
Via Railway from Thelon Forks to Great Slave Lake	200 "	
Via Lake to Fort Smith in Peace River District	357 "	950
Total		3,970

Time on eastern section for steamers averaging 15 miles per hour	203 hours
Allowing 13 hours for difference between air lines and sailing lines	13 "
Time on on western section:	216 hours or 9 days
On river 10 miles per hour	40 hours
On railway 25 miles per hour	8 "
On lake 15 miles per hour	24 "
Grand total on route 12 days.	72 hours or 3 days*

*When the extension of the railway is made from Thelon Forks to Chesterfield Inlet, and river navigation superceded as certain to occur in the near future, the time on western section will be 2 days.

NOTE A.—Under Caption of "Navigation," Lieut. Gordon remarks:

"The ice has been supposed hitherto to be the most formidable barrier to the navigation of the Straits, but its terrors disappear to a great extent. The ice met with on the cruise of the Neptune may be divided into three classes, having distinctly separate origins. There are icebergs from the glaciers of Fox Channel; heavy Arctic field ice from the Channel itself, and what may be called ordinary field ice, being that formed on the shores or in the Bay or Straits.

"We met no icebergs in Hudson Bay nor did I hear of any being there. The icebergs seen in the Straits in August and September would form no greater barriers than those met with off the Straits of Belle Isle, nor were they more numerous in the Straits than they frequently are off Belle Isle.

"The harbor ice forms at Fort Churchill on the average about the middle of November, and breaks up about the middle of June.

"In the Bay the surface temperature varies much with the geographical position, being 39.04 off Marble Island, 41 off Cape Churchill, and 36.11 off the south end of Mansfield Island.

"*Hudson Bay may therefore be regarded as a vast basin of comparatively warm water, the effect of which must be to considerably ameliorate the winter climate at the south and east of it.*

"The resident factor at Churchill informs me, that the Bay never freezes over so far out from shore that clear water cannot be seen."

Attached to the reports, are many pages of climatic, meteorological, and other observations taken at the different stations and at the other points, including the Straits of Belle Isle. From these a few examples will be quoted, as follows:

DURATION OF FOGS—HOURS.

	BELLE ISLE STRAITS	HUDSON STRAITS
August, 1884	Hours, 184	Hours, 102
September, 1884	" 76	" 28
October, 1884	" 60	" 24
June, 1885	" 248	" 152
July, 1885	" 288	" 224

TEMPERATURE.

	BELLE ISLE STRAITS		HUDSON STRAITS WEST ENTRANCE	
	Highest	*Lowest*	*Highest*	*Lowest*
October, 1884	46°	22°	38°	1.7°
November, 1884	40.9°	9°	30°	13.6°
June, 1885	60°	26°	42.5°	22.6°
July, 1885	69°	42°	62.2°	30.9°
August; 1885	68°	46°	63.8°	32.1°
September, 1885	59°	30°	38°	24.8°

SEA TEMPERATURE.

Belle Isle—July, 1884, 41.6°.
Hudson's Bay—September, 1884, 41° at Fort Churchill.
Hudson's Straits—September, 1884, 36° at Mansfield Island.

NOTE B.—Commander Wakeman remarks:

"The ordinary spirit and pole compasses were utterly useless from the time we entered the Straits, but the standard compass, one of Sir William Thompson's (known as the Compensating Compass) gave us the greatest possible satisfaction. Once properly compensated, it never varied, and we learned to trust it most implicitely.

"I now conclude this part of the report by saying, that I absolutely agree with Captain Gordon in fixing the date for the opening of navigation in Hudson Straits for commercial purposes by suitable vessels at from the 1st to the 10th of July. I consider that navigation should close from the 15th to the 20th of October.

NOTE C.—Commander Low's statement.

In an address before "the Canadian Club of Toronto," February 6, 1905, a portion of Commander Low's remarks were reported as follows:

"Mr. Low said he was not there to discuss the Hudson Bay passage, but it would save 1,000 miles railway haul from Regina to Liverpool, which, at half a cent a ton per mile, ran into millions. In ten years there would be freight enough for both routes, and tramp steamers, he believed, could take care of the trade. Navigation was fit for these for three months and a half. The narrowest part of Hudson Strait was 30 miles wide, and owing to its shelving soundings, was safer than the St. Lawrence. Ships should not be there until July 20 though the ice breaks up earlier. The Straits were open till October, and no ice formed until December, but the fogs late in the season were dangerous."

NOTE D.—Surveyor Tyrrell's opinions.

The following extract is taken from a recently published statement made by Surveyor Tyrrell:

"Since my first experience in Hudson Bay, when connected as hydrographer and meteorologist with the Dominion Government expedition under Lieut. Gordon in 1885 and 1886, I have been strongly impressed with the great value of Hudson Bay and the Straits Route, and *I am firmly convinced that it is bound to be in the no very distant future the great outlet for the produce of the Canadian North-West.* This is by no means the first time I have said this, as I have written many letters on the subject.

"I spent one year on an island on the north shore of Hudson Straits, for the purpose of ascertaining the possibilities of navigation in the Straits, and during the two summers preceeding and succeeding the winter which I spent on the Island I made four trips through the straits on the steamer Alert, and from my personal observation on those occasions, I am convinced the Straits are navigable for five months of the year The Bay, of course, is always navigable, as it never freezes over. This of course, would not apply to the harbors of the Bay.

TRIBUTARY TRAFFIC TERRITORY.

From the railway terminal on Great Slave Lake (this barbarous name it is hoped will soon be changed to the original Indian "Athabasco" or some other short euphoneous one) commences an uninterrupted deep water way 1,500 miles north-west to the Arctic Ocean via the Mackenzie River, and from its delta a navigable branch (Peel River) extends within about 40 miles of a navigable branch (Porcupine) of the great Yukon River with its more than 3,000 miles of steamer routes on which scores of them are now in use. A very favorable line for a "railway at the short divide" is known to exist as the same is already utilized as a cart path for prospecters "outfits."

The charter of this company authorizes it to build this railway and operate steamers to connect with the same. It is expected to have a preliminary survey made, and construction work commence at an early date. *When established, the mineral products and commerce of the famous Klondike districts will find this route the cheapest and quickest to Atlantic ports.*

Coming southward, Great Bear Lake (reported as the most prolific fishery reservoir of its size in the world) can be reached by large steamers through its outlet without obstruction.

Next is the Liard River, a noble stream navigable for over 600 miles, with the exception of a few miles of rapids. One of its branches, Dease River, ending at Dease Lake, extends to within about a score of miles of the navigable section of the Stickine River, at a point near which the Canadian Government at one time favored making the terminus of a railway to Dawson, but the then unsettled United States boundary conditions retarded its adoption. With a "divide" railway at that locality this route can present the *cheapest* possible trans-continental transit within the confines of Canada. That these features will receive attention later on, goes without saying. Next southeasterly on the Mackenzie is Hay River, partly navigable, extending for hundreds of miles into the heart of the premium wheat district.

But the grandest tributary water-way is found at Slave River, navigable for over 250 miles except at one long rapid near Fort Smith, which this company is authorized to improve, and will carefully survey in due course.

From this river, branches the famous Peace River, navigable for 900 miles except at two points, one which can be readily improved near Fort Vermillion, the other far distant at the base of the Rocky Mountains, beyond the agricultural zone. The transportation on this river will reach immense proportions when the new outlet for its products is opened over this company's route. Near its junction, commences the Athabasca Lake outlet and the Athabasca River, which is navigable for steamers for over 600 miles southwest with interruptions at two or three rapids which this company expects to render passable for barges with a very moderate expense.

Other minor tributary waterways might be mentioned, but the aggregate of those already noted, present the magnificent total of over 7,500 miles included in one inland system, of which the Thelon divide railway is the natural commercial focus.

To this can be added nearly as great length of coast line on Hudson Bay and Straits, also four immense rivers, emptying on the west coast of the great Canadian sea with which the transit

Slave River. Southwesterly View in Winter. Photo by J. W. Tyrrell.

facilities of this company will connect as more fully explained elsewhere.

To sum up the case by stating that the first "divide" railway of this company affords a key to 10,000 miles of inland sea, lake and river water-ways, it will be seen, is easily demonstrated by undisputable facts.

MACKENZIE BASIN INDUSTRIAL RESOURCES.

To give a fairly descriptive outline of the various resources of that vast region, would fill volumes and will not be attempted in these limited pages. Suffice it to say, that gold can be washed from the sand bars of many of its streams, and districts where gold ledge mining give promise of profit, exist at the head waters of the Peace and Liard Rivers among the Rocky Mountains. Silver, copper, lead and iron veins or deposits have been found around Great Slave Lake and elsewhere. Indications of the presence of petroleum occur for scores of miles along the Athabasca River. Salt springs are very extensive near Athabasca Lake, but more important are the exposures of first class veins of coal for hundreds of miles on the banks of the Mackenzie, and in other widely separated localities. Abundance of timber is available near Great Slave Lake (as shown in photo), but especially along the eastern slope of the Rocky Mountains. That the local industries need not lack for raw material for ages to come is too evident to need argument. Fishing resources are practically unlimited.

But it is to the development of the latent agricultural riches that attention will now be mainly directed. The most reliable edited data on this subject is to be found in the REPORT OF A SELECT COMMITTEE OF THE DOMINION SENATE APPOINTED TO ENQUIRE INTO THE RESOURCES OF THE GREAT MACKENZIE BASIN, published in 1888 as an official document containing 310 pages.

In this is noted the mysterious phenomena of the warm "Chinook winds" which come into Canada from the south-west, and seem to follow the eastern slope of the Rocky Mountains like a chimney flue, gradually decreasing in warmth until reaching the Arctic at the Mackenzie Delta. The Senate Committee sought the opinion of various scientists, as to the cause of those remarkable

Winter View of Forest on South Shore of Great Slave Lake. Photo by J. W. Tyrrell.

warm winds, that of Professor Macoun, chief botanist in the Geological Department at Ottawa, was given most space, and extracts of the same will be found appended.* One paragraph deserves special attention. "The American desert to the south of us is the father of our grand country to the north, as it gives us both heat and moisture. It is the heating up of the wind in the desert that causes the spring in the Rocky Mountains and along the Peace River Valley to be ahead of the spring in the region where we now are. The Peace River in latitude 56 has its banks covered with anemones and other flowers to-day, while here (Ottawa) 800 miles to the south they have not made their appearance."

The professor previously mentioned finding the cactus growing wild along the banks of the Peace River, which is not elsewhere to be found on the continent north of Mexico, or the adjoining states. Certainly no other proof is needed of the climate being marvellously mild irrespective of latitude, with specially favorable conditions for agricultural development.

The following quotations are made from the Senate Committee's report. "The extent of the scope of the enquiry covers 1,260,000 square miles, which area includes none of the islands of the Arctic Archipelago."

ARABLE AND PASTORAL LANDS.

"That within the scope of the Committee's enquiry there is a possible area of 656,000 square miles fitted for the growth of potatoes, 407,000 square miles suitable for barley, and 316,000 square miles suitable for wheat."

"That there is a pastoral area of 860,000 square miles, 26,000 miles of which is open prairie with occasional groves, the remainder being more or less wooded: 274,000 square miles, including the prairie, may be considered as arable land."

"That about 400,000 square miles of the total area is useless for the pasturage of domestic animals or for cultivation. This area comprising the Barren Grounds and a portion of the lightly wooded region to their south and west."

"That throughout this arable and pastoral area latitude bears no direct relation to summer isotherms, the spring flowers and the buds of deciduous trees appearing as early north of Great Slave Lake as at Winnipeg, St. Paul and Minneapolis, Kingston or Ottawa, and earlier along the Peace, Liard and some minor western affluents of the Great Mackenzie River, where the climate resembles that of western Ontario."

"That the native grasses and vetches are equal and in some districts superior to those of Eastern Canada."

"*That the prevailing south-west summer winds of the country in question bring the warmth and moisture which render possible the far northern cereal growth, and sensibly affect the climate of the region under consideration as far north as the Arctic circle and as far east as the eastern rim of the Mackenzie Basin.*"

FORESTS.

"The forest area has upon it a growth of trees well suited for all purposes of house and ship building, for mining, railway and bridging purposes, far in excess of its own needs, and of great prospective value to the treeless regions of Canada and the United States to the south, the growth on the Laurentian formation being scant, but the alluvial portion has upon it (on the river of its name and elsewhere) the "Liard," a balsam poplar, sometimes called Balm of Gilead or rough bark poplar, 120 feet high, with a stump diameter of five or six feet. The *white spruce*, 150 feet high, with a stump diameter of four to five feet; the *larch*, of about the same size, and the *banksian pine*, whose straight stem is often 100 feet long, with only two feet of diameter at the stump."

"The Indian population is sparse, and the Indians, never having lived in large communities, are peaceable, and their general character and habits as given by witnesses justify a hope that the development of the country, as in the case of the Indians of British Columbia, may be aided by them without great danger of their demoralization and with a reasonable hope that, as in the case of the Indians mentioned, their condition may be improved."

"Your Committee feel that with this report and the evidence herewith they will have done all that it was possible to do since the date of their appointment and the receipt of their instructions, to inform your Honorable House and the people of this country upon the resources of *Canada's Great Reserve*."

"All of which is respectfully submitted."

"JOHN SCHULTZ,"

"*Chairman.*"

To the above will be added a few extracts from testimony of witnesses as published by the Senate Committee. See page 9.*

The Senate Committee Report is accompanied by a series of maps one of which indicates the isothermal lines with corresponding boundaries of cultivation of roots and grains, the widest being that of potatoes, and the narrowest that of wheat with barley and oats coming between, both are copied on Map No. 3 which also shows the areas of the Provinces and Territories.

Vast herds of buffalo in pre-civilized times ranged as far north as the Liard River, and the last herd in a wild state on the continent of the species known as "wood buffalo" remains in the

*Q. *By the Chairman. What are the causes that produce these south-west (Chinook) winds you have just spoken of?*

A. "Many causes are given, but to me it seems that the true cause is the great American desert which has an extent of nearly 500,000 square miles in the central part of the United States. This elevated plateau has a very light rainfall, and during winter is very much exposed to both the direct rays of the sun and to the influence of either cold or warm winds. Blodget, the great authority on atmospheric, currents says that at Fort Yuma in the Valley of the Colorado, there is the warmest climate in the world, with an average temperature throughout the year of 73 degrees. What is the cause of the heat? It is the influx of the heated air from the south loaded with moisture. . . Then you see we have two currents of warm air drawn inwards precisely in the same way that the high plateau of Asia actually draws the south-east 'trade winds' on to it. We have the winds from the Gulf of Mexico and the Pacific drawn northward on account of the American desert in exactly the same way as in India."

vicinity of Great Slave Lake the year round, which is a certificate in itself of the mildness of the climate, while affording sufficient length of open winter to enable them to find continuous food. Their numbers were reported in 1904 to be less than 300. Government has forbidden their being hunted as game.

COMMERCIAL IMPORTANCE OF WHEAT.

That wheat is the most important commercial product of the soil, goes without saying. It is the food which the *civilized* world especially craves, and its consumption is the best economic guage of increasing wealth of any nation, because the use of coarser grained food becomes correspondingly superceded. This is very noticeable in the case of the United States. Its unparalelled financial prosperity for the last decade is accompanied by a greater per capita demand for wheat, and the advance in price of about 33 per cent. Population is increasing so much faster than the wheat supply that it bids fair to become an importing rather than exporting country, and supplies are beginning to be drawn from Canada in the face of a 25 cents per bushel duty, which will doubtless be abated before long. Then it will be a rival to Great Britain in controlling the Canadian markets nearest its boundaries.†

Another source of demand is developing on the Pacific. Russia has been since the present war a heavy purchaser in San Francisco; Japan during the last year multiplied its purchases in Canada nearly fifteen hundred per cent. over 1903. China is increasing its orders rapidly as its "well to do" classes are learning to prefer wheat to rice, for at least a part of their diet. A small per centage from the hundreds of millions of the "Celestials" implies an enormous aggregate.

**Professor Magoun, of the Dominion Geological Department testifies to personal observations in Peace River district.*

While at Fort Vermillion, on Peace River, in lat. 58° 24', I was informed by old Mr. Shaw, who had charge of that post for fifteen years, that Indian corn would ripen well every year there, and at Battle River corn ripened three years in succession, and that frost never injured anything on this part of the river. The whole country at Fort Vermillion is a plain, not elevated at its highest point more than a hundred feet over the river, but the greater part is less than fifty feet. The soil is wonderfully like that of the second prairie steppe, in the prairie region, as the surface is composed of black loam, mixed apparently with limestone gravel. From Vermillion the Caribou Mountains are visible about forty miles off. These may have the effect of keeping off the cold winds from Great Slave Lake, and hence the country is permanently warm. Both days and nights have been warm down on this part of the river, whereas on the upper parts, where high banks are, the cold was even felt at night in August.

Having just completed an examination of the whole grasses of the Dominion, I am safe in stating that the grasses of the Mackenzie River valley and those of northern British Columbia are of the most nutritious character, and are actually the grasses best suited for pastorage of any known to stock men or farmers. The grasses referred to are those known as red top, and Kentucky blue grass, or scientifically, *Poa Pretensis* and *Poa Seratina*, *Poa Tenniflora* and *Ceasia*. These four species are well known to American stock men and are considered of the highest value. They are the commonest of the grasses in our northern forest region and along the foot hills of the Rocky Mountains. Three of these species are known in the eastern provinces. One of them is exclusively western and the greater part of the common pasturage of Ontario is altogether composed of *Poa pretensis* (Kentucky blue grass, or red top).

It grows all through the Peace River valley, but was particularly noticed on the plateau above Fort St. John in latitude 56. Here it was actually measured by myself and was found to attain a height of eight feet, while the weeds, such as the purple fire weed of the east (*Epilobium Augustifolium*) attained a height of seven feet. These are given in illustration of the wonderful luxuriance of the commoner plants on that high plateau. The vegetation throughout the whole Peace River valley is of the most luxuriant character, and it seems more like that of the tropics than a country drawing near the Arctic circle.

I might mention that at Fort Vermillion, in latitude 58° 24' in 1875, the barley was ripe on August 6th. Below that, 50 or 60 miles, is a small fort called Red River. There a Frenchman named St. Cyr had a garden, and he told me he had a particular thing growing in the garden that he did not know anything about. I went out to look at it and there was a splendid patch of cucumbers, many of them ripe. That was in August. I said: "These are cucumbers; how did you start them?" He said: "I got the seed from England and put it in the ground, and that is what has come from it."

Isadore Clut, R. C. Bishop, Arindele, testified:

Q. The Peace River is a splendid river for navigation, though it has a fall below Fort Vermillion. The steamer "Graham" ascends that far. I believe that it would be very easy to remove the rocks near the left bank. The fall there is inconsiderable. Below that fall the river is perfectly navigable for steamers—a little shallow, but navigable I should say to Fort Hudson's Hope, at the foot of the Rocky Mountains and also across the Rocky Mountains. On the other side of the mountains and also across the Rocky Mountains barques navigate the river.

A. The Mackenzie is the finest river in the world for its length, its depth and also its navigation in summer. Steamers leaving Fort Smith cross the Great Slave Lake and can descend as far as the Aretic Sea. They can also ascend Peel River. The Mackenzie, which I have travelled upon very frequently, is a good deal larger than the St. Lawrence in depth and in the volume of its water.

Hon. Mr. Christie, Ex-Chief Factor Hudson Bay Company, testified:

Q. Will you please give the Committee an idea of the general character of the Mackenzie River country? A. The Mackenzie River is a noble stream from its head at Big Island, Great Slave Lake, to the sea. It runs a course of 1,037 miles, according to Sir John Franklin, and has an average breadth of a mile and a quarter. At Fort Simpson it is about that breadth. The Hudson Bay Company have a screw steamer running on the river and around Great Slave Lake and up the Slave River to Fort Smith or Salt River. I may mention here in passing that Salt River falls into the Great Slave River, and derives its name from the fact of their being salt springs about a day's journey inland from Slave River. The springs boil up and evaporate and the salt is left there quite pure. It is used on Lake Athabasca and Mackenzie River. The Hudson Bay Company's employees shovel it at the springs quite pure. The snow in Upper Peace River would go away much sooner than in Manitoba, because as you approach the mountains the climate is much milder.

Q. Is the vegetation luxuriant? A. Yes. It is not like the Saskatchewan country. The grass of the Peace River country is more like the grass of Manitoba.

Q. I know that for pasture there is no better country in the world than the Peace River Valley. But is the soil as cultivable as that of Manitoba? Can crops be relied on? A. Yes. I think that wheat would be as certain in Peace River as in the Saskatchewan country.

Extract from the Hudson Bay Company's journal, Fort St. John, Peace River, for a series of ten years. Lat. 59° 12' north, long. 120° west. Altitude above the sea, nearly 1,600 feet.

Opening of River.			First Ice Drift in River.	
1866—April	19		November	7
1867 "	21		"	3 or 8
1868 "	20		"	7
1869 "	23		"	8
1870 "	26		No record.	
1871 "	18		November	10
1872 "	19		"	8
1873 "	23		"	4
1874 "	19		October	31
1875 "	16			

†By a recent ruling of the United States Government the duty is remitted on grain imported for milling and exported, and which Congress has sustained. This is the first step in the direction of free grain. Canada admits southern (Indian) corn free.

Referring to the British Islands in this connection, official reports show that the value of their food imports for the year ending July 1, 1904, was $584,137,021. Of this $250,977,727 was in wheat, barley and oats, but the proportion of wheat was $145,710,662, and wheat in flour $47,301,634, making a grand total of $193,017,296,* of which Canada furnished $11,674,511 or about 8 per cent. The importance of British markets to Canada is indicated by the returns that of $85,606,483 agricultural products exported at the same time as above, Great Britain took $78,174,052 or over 90 per cent.

To have the home centre of the Empire placed in a position to draw, if need be, all its necessary imported wheat from its nearest imperial source of supply, will at once appear in the light of the foregoing facts to be THE MOST MOMENTOUS COMMERCIAL AS WELL AS INDUSTRIAL RESULT IN SIGHT *and one to jointly benefit both the mother country and the daughter colony beyond computation.* This the "premium wheat area" of the Mackenzie Basin can do in the near future with the facilities this company proposes to provide. That the quality will be superior, and the quantity eventually sufficient, will appear from the following data.

PREMIUM WHEAT AREA.

The premium wheat area is shown in color on accompanying map No. 2. Attention is especially called to the two points on it, numbered 1 and 2, which are about 500 miles apart. At the point No. 1 near the Athabasca River was grown the wheat which took the first prize at the World's Centennial Exhibition in Philadelphia, U.S., as the best sent from any country. Professor Macoun gave testimony concerning it before the Senate Committee as found on page 245 of its report. It was planted the 5th of May, he found it harvested on the 26th of August, and from the stack took the grain which gained the prize as mentioned. He testified:

"I exhibited it in Manitoba (en route) before Consul Taylor and many other gentlemen, and the matter of the number of the grains in the fasciles was then discussed and made public. They took a quantity of the wheat from me and shelled it, and Mr. Gouin, Inspector of Inland Revenue, weighed it, and it showed a weight of 68 pounds to the bushel. . . It was the wonderful flintness of the wheat which gave it its weight."

The chief engineer of this Company visited the Mackenzie Basin in 1898 and obtained personal statements from residents in widely separated localities. One was from a fur-trader located near Fort Rae on the north arm of Great Slave Lake at lat. 63, the northern limit of the indicated "area."

There he raised the same garden vegetables that he could cultivate in any part of Ontario, but found those in the north more prolific and superior in size.

But the most important statement was from a practical farmer who cultivated wheat at point No. 2 on the Liard River. From the original document, as signed by him, the following sentences are copied.

STATEMENT OF GEORGE SUTHERLAND.

EDMONTON, ALBERTA, August 2, 1898.

"I was born in Caithness-shire Scotland in 1860, came to Montreal in 1880, and engaged with the Hudson Bay Company. I went to Fort Simpson in its service, and stayed in the Mackenzie River region for ten years. In 1890 I took up a quarter section of land at Stoney Plain Settlement in this vicinity where I have lived ever since. . . In respect to the farming prospects of that region I have to say that I consider it a better country for crops on the average than the territory of Alberta and claim, that it will prove to be THE GARDEN OF CANADA. I was employed as a farmer for the Company at Fort Liard on the Liard River for four years, and cultivated about twenty acres. The wheat I raised there never failed of ripening. It would average 63 pounds to the bushel, and exceed 40 bushels to the acre without enrichment of any kind. The soil is deep and easily cultivated. I raised with equal success oats, barley, rye, potatoes, turnips, cabbages and any other garden truck in the open air except tomatoes, which required to be started under glass in order to come to perfection during the season. . .

"The climate there is milder than in this vicinity on the average, and I deem it as desirable as any I was ever acquainted with, and the country offers every inducement for settlement as soon as the means of cheap and easy transit is provided for access to it."

(Signed) GEORGE SUTHERLAND.

The statement is endorsed as to reliability of the author by Frank Oliver, Esq., for many years and at present member of the Dominion Parliament for the Edmonton District of Alberta.

It is to be remarked that the wheat of the Mackenzie region mainly grades as "No. 1 hard" which is the highest standard. None of the product in the United States attains that grade, and only a minor per centage of that raised in Manitoba comes up to that mark. The cause of this difference is worthy of special attention as explained by Professor Macoun to the Senate Committee in pages 242-3-4 of their Report. After remarking that the soil of the central portion of the Mackenzie Basin is especially rich because composed of what is called alluvium, he says: "The whole country from Edmonton north westerly to the Arctic Ocean in the Mackenzie Valley is underlaid by Devonian or cretaceous rocks, and by the disintegration of these rocks good

*A published return states that the yield of wheat in the United Kingdom in 1904, with an average of 23 bushels to the acre, was 8,000,000 bushels less than in 1903 owing partly to unfavorable season and also to decreased acreage which was diminishing from year to year. Under these conditions it was estimated that the import of over seas wheat would amount to 216,000,000 bushels, which at 120 cents per bushel for "No. 1 hard" would amount to the enormous sum of $259,200,000. Liverpool prices in February, 1905, ranged from $1.20 No. 1 Canada to 85 cents for average Argentina wheat.

A census of the white population in Mackenzie River Districts, 1882, appearing in Senate Committee Report, enumerates 248, of whom 75 were men and the rest women and children.

soil is produced. The hills beyond this river, the high hills, are nearly barren. Why? Because they are composed of what is called Laurentian rock. I had the honor when in England two years ago of reading a paper before the Royal Geographical Society, and at that time took upon me to speak of our North West and its productions. I took in my hands heads of wheat grown in Kent and Surrey which contains 3 and 4 grains to the fascile, in wheat grown at Ottawa the fasciles contain 2 and 3 grains. I have now in my hands heads of wheat and barley grown at Dunvegan in latitude 56. Any one examining these heads will see that the fasciles contain from 4 to 5 grains, an average of 4½ grains to the fascile. When I was on the Peace River in 1875 I got wheat at Lake Athabasca that contained 5 and 6 grains to the fascile."

"I turned to the English gentlemen and said, I can prove the wonderful productiveness of the Canadian North West. If the farmers of Ontario with their 2 and 3 grains to the fascile, can produce 25 bushels to the acre, under the same conditions the men of Manitoba will produce 35 to 40 bushels to the acre, and those of Peace River will run above 40, and those further to the north still more, granted that the same aere produced the same number of stalks. It is a known fact that all fruits and grains produce more abundantly as they approach their northern limit."

"Apple trees will succeed eventually in every part of the North West Territories and far northward. They raise apples in abundance for export at Hazan in Russia. This province has a climate exactly like ours as far north as 56°, which would take us up to Dunregan on the Peace River, so the time is coming when apples will grow as far north at the Liard."

Another scientific authority stated (see pages 151-3 Senate Committee Report): "It is well understood that the growth of the *cerealia* and of the most useful vegetables depends chiefly on the intensity and duration of the summer heats, and is comparatively little influenced by the winter cold or lowness of the mean temperature of the year. . .

"In addition to the favorable climatic conditions indicated by the thermometer, the length of days in summer in the higher latitudes favor the rapid and vigorous growth of vegetables, and take the place to a certain extent of heat in this respect. In latitude 56, which may be taken to represent much of the Peace River country, sunrise occurs on June 20 at 3 hours 12 minutes, sunset at 8 hours 50 minutes, while 6° further south in latitude 50, which may represent Manitoba, sunrise occurs on the same day at 3 hours 49 minutes, sunset at 8 hours 13 minutes, the *duration of sunlight being one hour and a quarter in excess in the northern locality.*"

As latitude 58° is nearest the centre of the Peace River district, and 61° represents the Liard River region, it follows that sunlight June 20 is from 1 hour and 20 minutes to 2 hours longer per diem in the "Premium Wheat Area" than the average of Manitoba, affording a very important feature of agricultural superiority.

Thus far as to access, climate, soil, grain superiority and prolificness of the "Premium Wheat Area"; its extent will next be considered.

As indicated on Map 2 its width will average 650 miles, and its average length north and south 525 miles, which aggregate 341,250 square miles, which is 3,397 square miles in excess of Great Britain and Ireland, France and Holland's combined area, and aggregate over 218 millions of acres. Deducting area of large lakes leaves about 200 millions of land acreage. Map 4 will give some idea of the comparative size of Europe, minus Russia, in contrast with that of North Western Canada, which will render dilating upon the immensity of the Dominion superfluous. THAT THE GREAT MACKENZIE BASIN ALONE IS AN EMPIRE IN SIZE IS QUITE APPARENT.

THE MOST DEFENSIBLE OVER-SEA ROUTE.

Mr. Henry Bourassa, M.P., from Quebec, in a recent address to the students of Kingston University, Ontario, was reported as saying that Great Britain could not maintain a conflict with the United States because of the liability of having her food supplies cut off, which would mean starvation in the British Islands within 3 months.

It is not generally known that all the grain exported from North Western Canada at present must pass through the improved channels along the St. Mary's River which have been made by the American Government, extending for many miles far within its territory, and an executive order from Washington could any day legally forbid free passage for Canadian produce through the same, which it would take at least 10 years of time and 10 millions of money for Canada to duplicate within its own limits.

In case of war a few men could cross the near-by boundary and with battery or dynamite in a few hours close the narrow river channel below Montreal and Quebec effectually and indefinitely.

The supplies from India via the Suez Canal, or from the Black or Baltic Seas, pass through or near foreign shores, and those from South America are liable to the uncertainties of local revolutions so common on that continent, to say nothing of hostile ships or fleets on the far distant intermediate waters.

In contrast with these is the *new short route from the greatest and best grain fields in the world, which for more than half the way is within imperial limits*, and for the remainder upon an easily warship patrolled air line between Hudson Straits and the British Islands at Belfast or Glasgow, or with a curve to London or Liverpool.

That the availability of recourse to the ample and superior food supplies of the vast Mackenzie Basin by the *safest, quickest* and *cheapest possible route* to Great Britain is a "MOMENTOUS ANNOUNCEMENT" for the benefit of the kingdom and the Dominion, evidently needs no further proof or concluding argument.

CORPORATE POLICY AND MANAGEMENT.

The Board of Directors as representing the controlling stock interests are authorized to announce that the management of this Corporation will conform to the following general outlines.

FIRST.—That the majority of the capital stock shares will be retained in Canadian ownership and its affairs administered under such control.*

SECOND.—That in the construction department plans and methods will be preferred which will enable the Company to furnish safe, economical and ample traffic transportation, within the shortest time, coupled with the policy of mainly devoting surplus earnings, during the first 10 years, to the extension of its rail and waterway system with improvement of routes and electrical equipments including water powers in preference to increased dividend disbursements.†

THIRD.—That the paramount interests of this Company require the adoption of a system of careful selection, comfortable passage conditions, and promoting of located living advantages, of, and for, home seeking colonists emigrating by this route, and the same will be placed in charge of a COLONIST'S DEPARTMENT to insure special care and attention with command of the best available transit facilities for its purposes.

FOURTH.—That to promote, beyond the scope of its corporate powers, the interests of located farming colonists within its tributary traffic territory, by systematic measures extending over a series of years, until they shall become experienced agriculturists, without the pioneering risks and privations usual in new unsettled regions, this corporation will specially aid in developing the plans and operations of the CO-OPERATIVE COLONIZATION COMPANY OF WESTERN CANADA (Limited), in promoting those objects as authorized by its Dominion Charter of 1904, stipulating that shareholders of this Company shall have the option of becoming subscribers to its stock for a major part of its capital, and that the personel of the directorate of both companies shall be mainly identical, to the end that harmony of interests and management may be fully assured.

FIFTH.—While the energies and resources of the Company will be first devoted to opening the railway and branches between Thelon Forks and Great Slave Lake, a distance of about 200 miles, to be known as the western division, in connection with which through business can be successfully inaugurated, its policy will be to extend the route eastward to the ocean steamer terminal, near the river entrance, an air line distance of about 200 miles, as soon as traffic will warrant, to be known as the middle division, which will supercede the river barge service and materially reduce route transit time. As soon as practicable the line to be further extended to the sea coast, an air line distance of about 230 miles, as the eastern division. This will enable steamer connection to be made with the Hudson Bay ports of Ontario and Quebec from early in May until early in December, or fully seven months in each year with great traffic advantages.

SIXTH.—The longer period of navigation on Hudson Bay than in the Straits, makes a connection between the great Lakes and the great Canadian sea, extending to the trans-continental route of this company; *of double importance.* A Dominion charter having been granted to the Manitoba and Keewatin Railway Company to build a railway from Lake Superior to the sea coast at or between the Albany and Seven Rivers, as also to Winnipeg from a junction with the same, and this Company having power to utilize the very favorable waterway of the Albany river, which will reduce the length of railway necessary to open a through route to the great Lakes to less than 250 miles, on a marvellously favorable route, this Company has sought and obtained statuatory power (see Laws of 1904) to amalgamate with that corporation, under suitable arrangements at a latter date.

SPECIALIZED INFORMATION.

The general outlines of the corporate legal powers, industrial conditions, and business aims having been thus far stated, special information as to (1) Financial measures; (2) colonization arrangements; (3) engineer corps organization; (4) railway construction and operation; (5) marine affairs; (6) legal status (including Dominion or other laws, and opinions of legal counsel in special cases) will be dealt with in separate "appendicies" numbered as above, with "supplementary bulletins" to be issued from time to time as occasion may require.

GENERAL REMARKS.

The query will naturally arise in many minds why has the "Garden of Canada" remained so long unoccupied?

The answer is—because of its phenomenal isolation. On the West it is bounded by the Rocky Mountains, presenting an impassable barrier to the Pacific Coast except through a few gorges widely apart. On the North the icy Artic offers no reliable commercial access. On the East lay the hitherto comparately unknown region without even a blazed trail through it. The existence of the Thelon River in its entirety was first made known by Tyrrell's expedition in 1901, less than four years ago!

On the South from Fort Smith to Athabaska River Landing is 600 miles of more or less difficult upstream navigation, *on which no public system of conveyance exists,* thence to the nearest railway at Edmonton is by 120 miles of circuitous waggon road opened and maintained by the Hudson Bay Fur Company, which neither on that or on its river crafts favors promiscuous business. Hence it is not surprising that the white population numbering 248 in 1882 scarcely exceeds 1,000 now in the vast Mackenzie Basin. Thus the fact that the route of this Company is the only practicable means of access to the "Garden of Canada" on which prosperity there must wait, fully explains its present isolation and the remedy therefor.

*The different results experienced between railway corporations with lines located in Canada being controlled and managed there, and those with trans-Atlantic control and headquarters can be noted by a comparison between the records of the Canadian Pacific Railway, with head office at Montreal, and the Grand Trunk Railway with earliest control and management at its headquarters in London, England.

†The first importance will be attached to the securing of the best engineering talent, and to utilizing the latest improvements in power and operating equipments. It is assumed that electricity will be the permanent motive power, there being a abundance of first class waterfalls near the "divide" section, which can furnish ample power for operating the entire route from the lake to the sea. (See page 13).

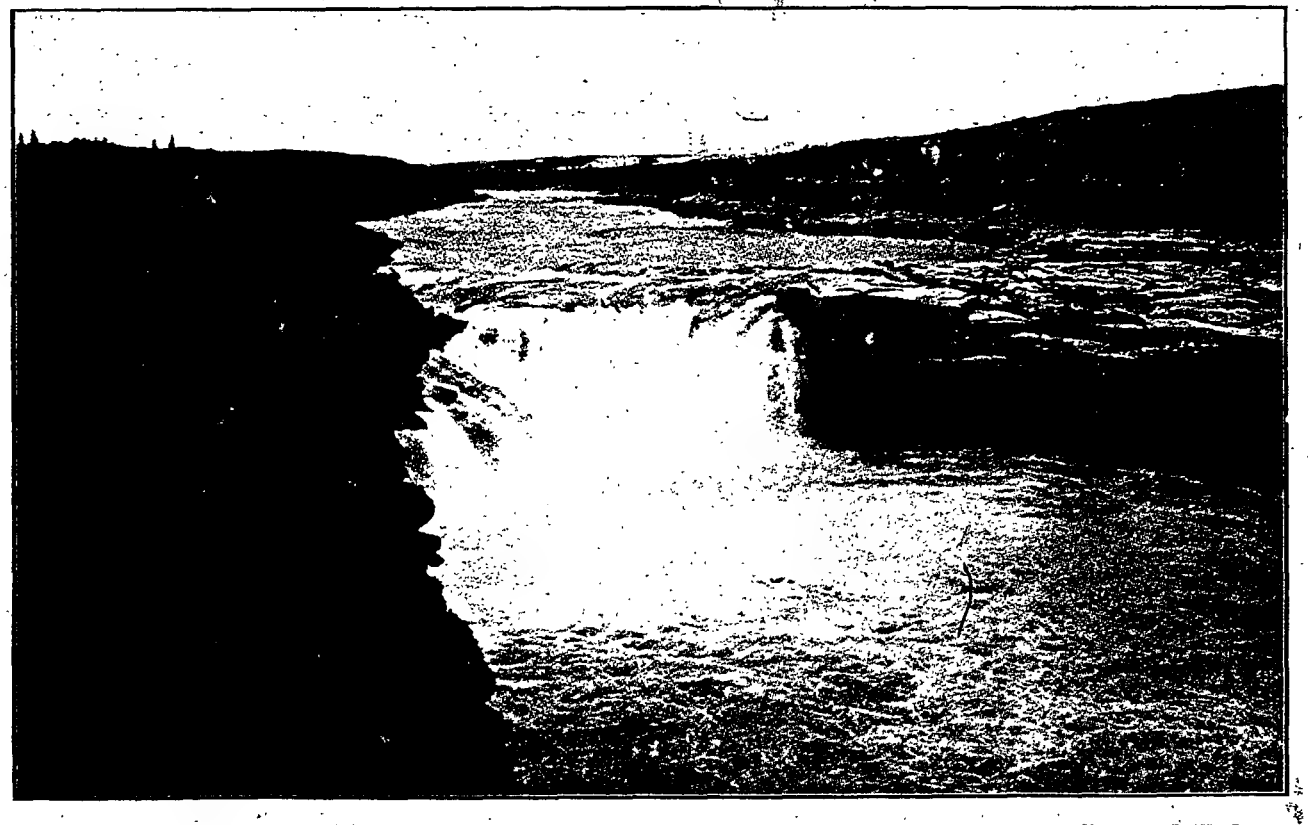
NAVIGATION NOTES.

Hudson Bay as remarked by Commander Gordon (see page 5) "*is a vast basin of comparatively warm water.*" Its temperature averages 19 degrees warmer than that of Lake Superior, and is navigable along its southern coast for a longer season. With ice breakers of the most modern type, as used at Cronstadt, Russia, and elsewhere to open the harbor entrances, coasting steamers can make trips from early in May until late into December, from the Inlet to Albany River. Owing to "chinook winds," etc., the Mackenzie River invariably opens from the Lake to the Arctic Ocean in May; Great Slave Lake early in June, Baker Lake and those connecting with it westward open about July 1st and close late in November, affording ample time to market the grain crop of the season. In this respect it is superior to the present grain transportation system from Manitoba and West *via* the great lakes to the Atlantic, which move but a small percentage of the wheat crop in time for export the same year.

WATER POWERS.

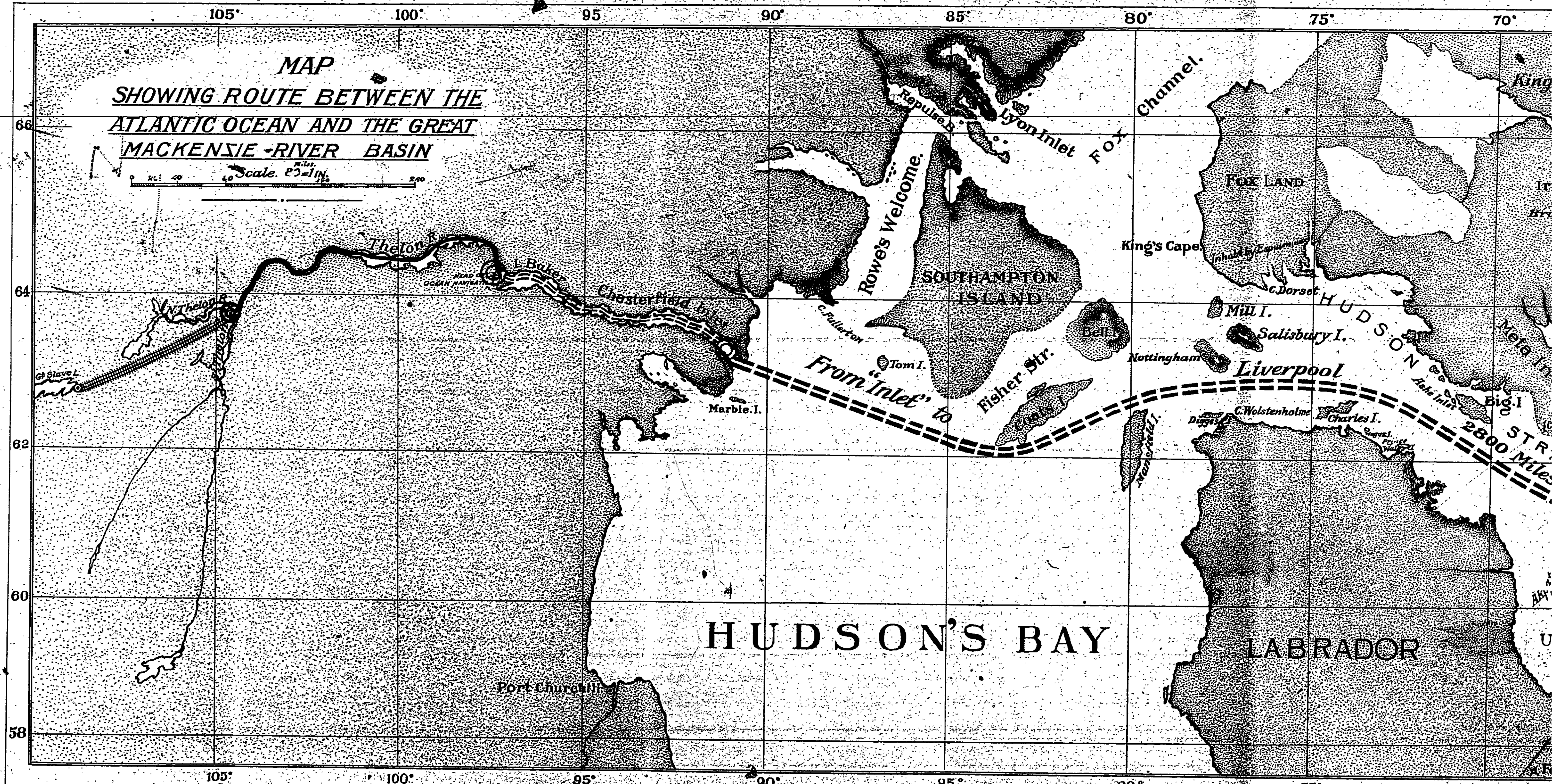
In view of operating the Western section with electrical power immediately, and the other divisions of the main line likewise later on, the proximity of easily utilized and ample water powers becomes a matter of prime importance. The North Thelon River furnishes several of which one is shown in following photo, which is about five miles from the "Forks," and two others, one of sixty feet and one of fifty feet fall are within the next ten miles.

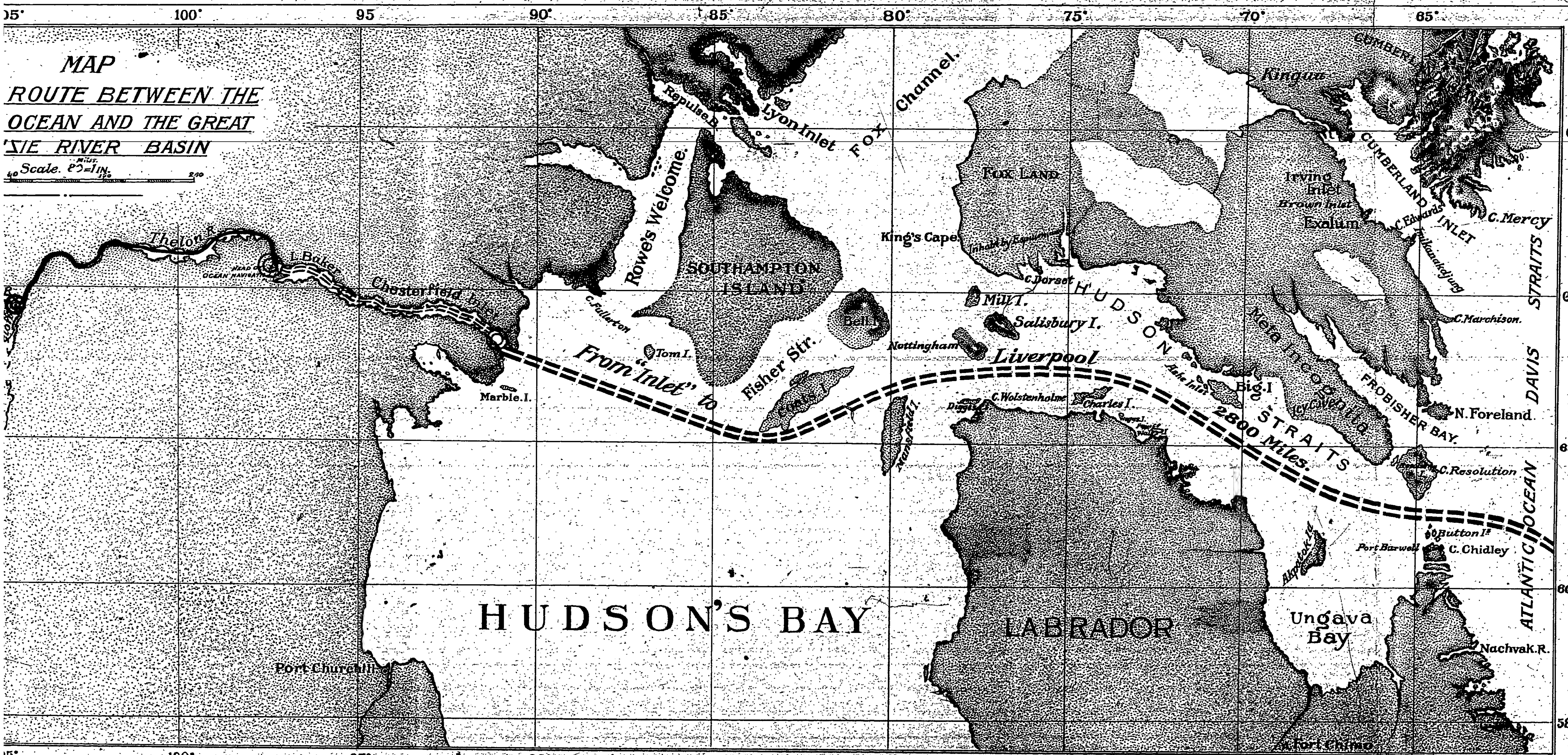
The Lockhart River, however, furnished one fall of eighty-five feet *within five miles of the western terminal of the main railway.* This river is the outlet of a chain of lakes the first of which fifty-five miles long and nine miles wide, the next 150 miles long averaging over twenty miles wide and four others between those areas. It falls 668 feet in twenty-four miles and enters the great lake within a mile or less of the lake steamer docks. This insures more power than can be used for railway purposes and is as conveniently situated as could be desired.



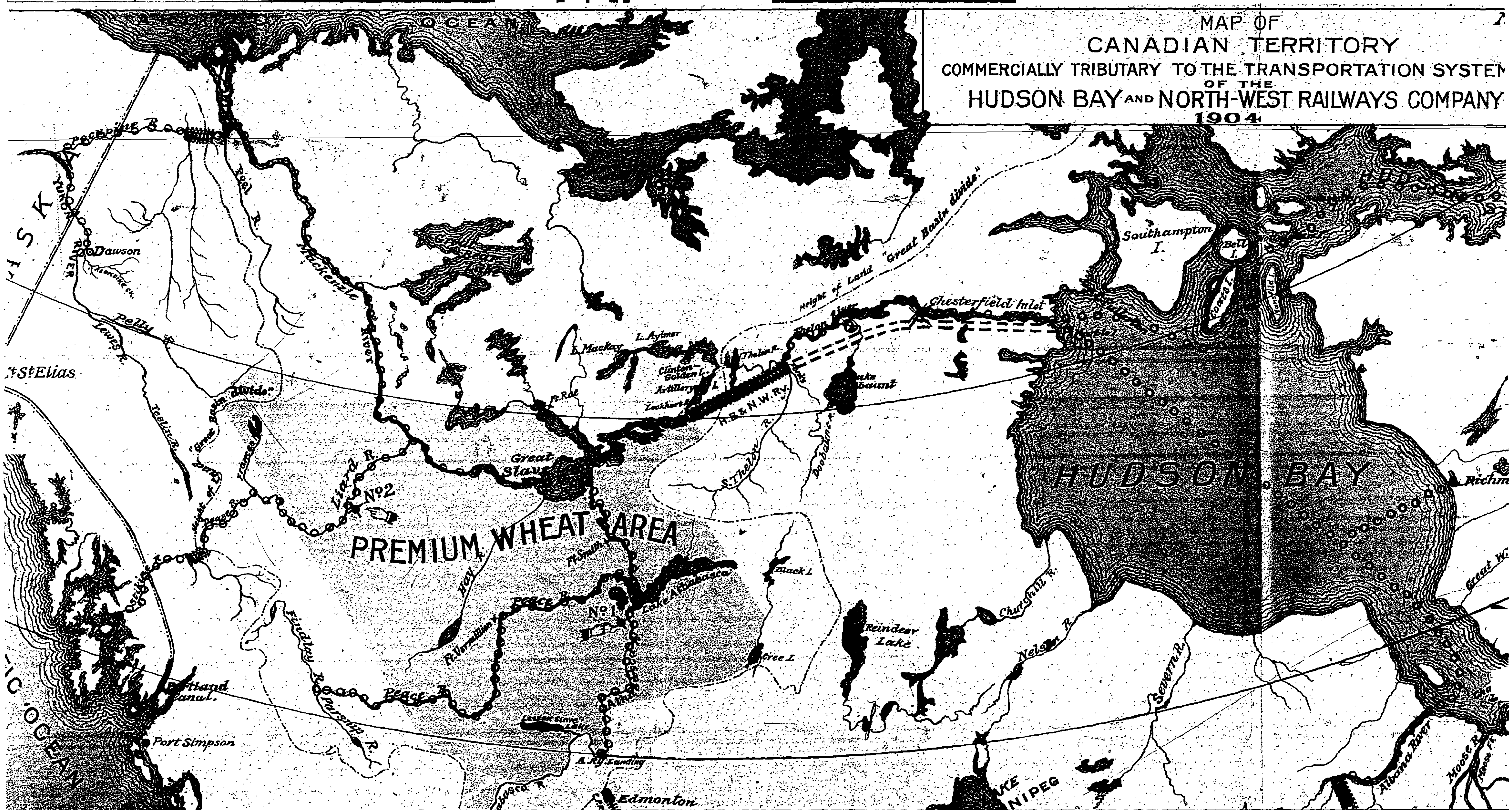
View of Sixty Foot Fall on North Thelon River near the "Forks." Photo by J. W. Tyrrell.

Nº1.

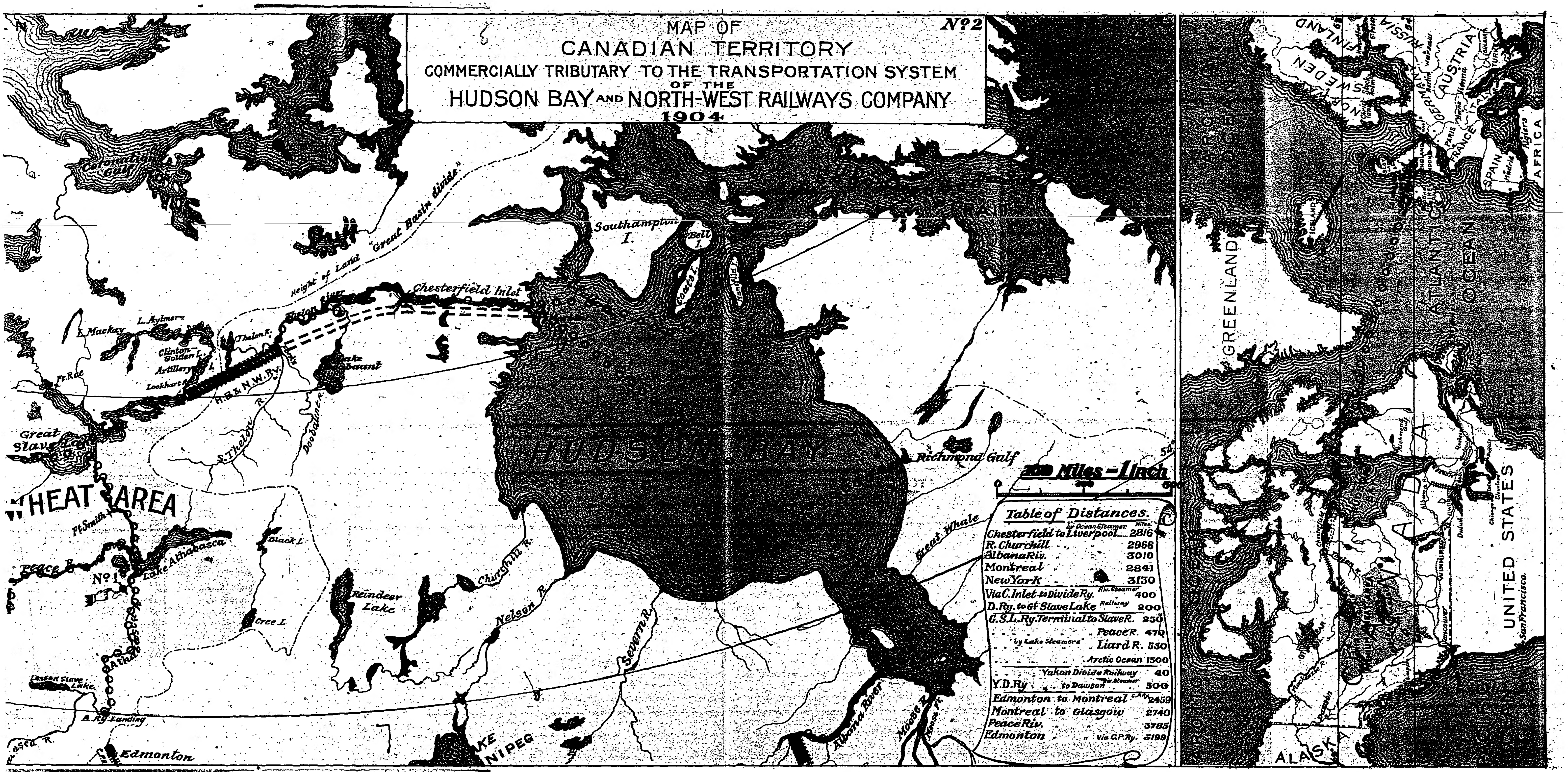

MAP
SHOWING ROUTE BETWEEN THE
ATLANTIC OCEAN AND THE GREAT
MACKENZIE-RIVER BASIN
Scale.
105°
100°
95
90°
85°
80°
75°
70°
66
64
62
60
58
Thelon R.
L. Baker
Chesterfield Inlet
Repulse B.
Lyon Inlet
FOX Channel.
Rowe's Welcome.
SOUTHAMPTON ISLAND
C. Fullerton
Tom I.
Marble I.
Fisher Str.
Coats I.
Bell I.
FOX LAND
King's Cape
C. Dorset
Mill I.
Salisbury I.
Nottingham
HUDSON
Liverpool
From "Inlet" to
Mansfield I.
Digges
C. Wolstenholme
Charles I.
Big I.
2800 Miles
Gt Slave L.
Port Churchill
HUDSON'S BAY
LABRADOR
105°
100°
95°
90°
85°
80°
75°
70°



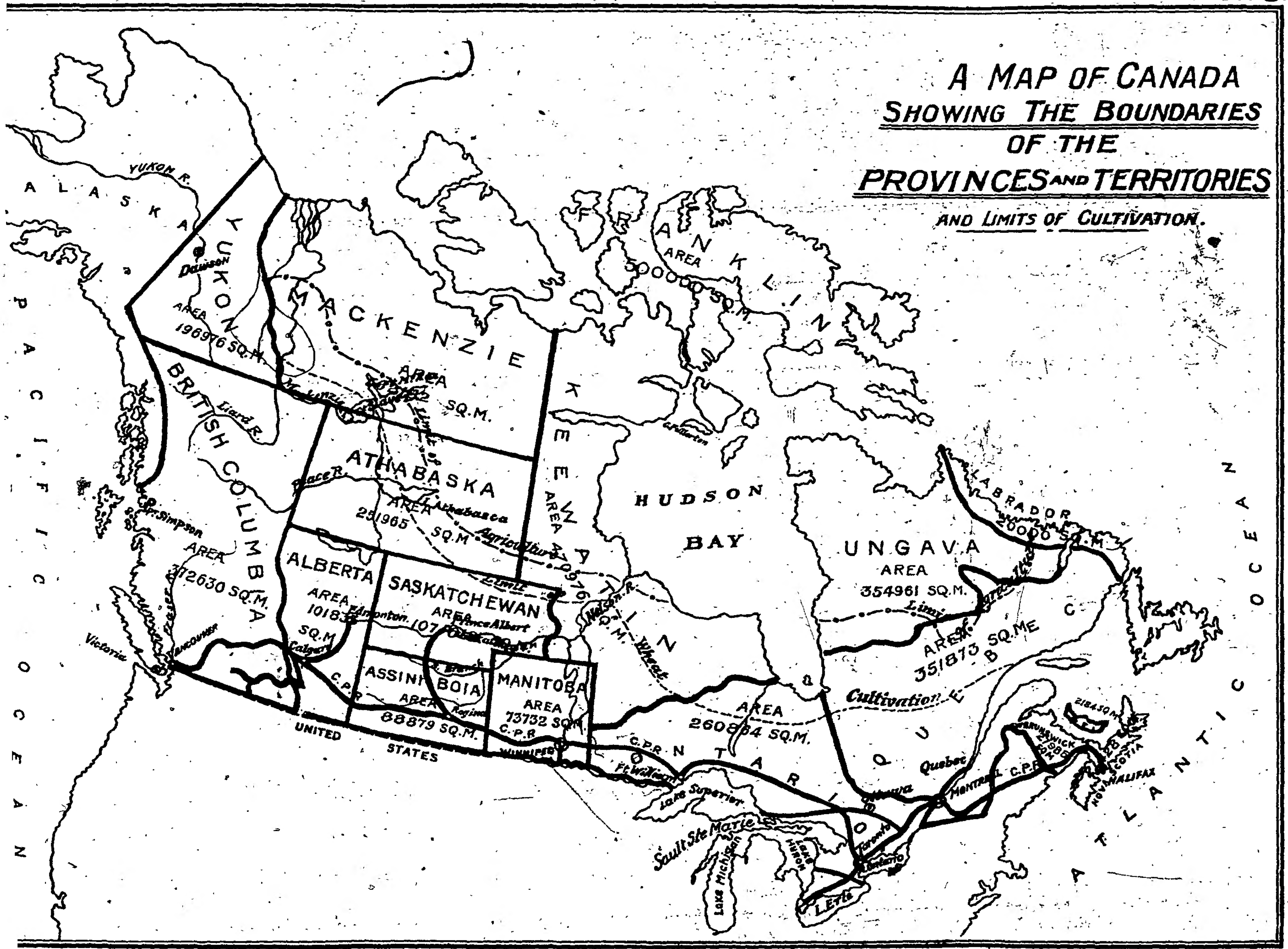
MAP
ROUTE BETWEEN THE
OCEAN AND THE GREAT
ZIE RIVER BASIN
Scale. 80 Miles = 1 IN.
HUDSON'S BAY
LABRADOR
SOUTHAMPTON ISLAND
FOX LAND
Fox Channel.
Rowe's Welcome.
Lyon Inlet
Repulse B.
Fisher Str.
From "Inlet" to Liverpool
2800 Miles.
HUDSON STRAITS
FROBISHER BAY
CUMBERLAND INLET
DAVIS STRAITS
ATLANTIC OCEAN
Ungava Bay
Thelon R.
L. Baker
Chesterfield Inlet
Marble. I.
Tom I.
C. Fullerton
Bell I.
Mill I.
Salisbury I.
Nottingham
King's Cape
C. Dorset
C. Wolstenholme
Charles I.
Big I.
Meta Incognita
N. Foreland
C. Resolution
Button Is
C. Chidley
Port Burwell
C. Marchison.
C. Mercy
Exalum
Irving Inlet
Kingua
Nachvak R.
Port Churchill
Fort Chimo
282

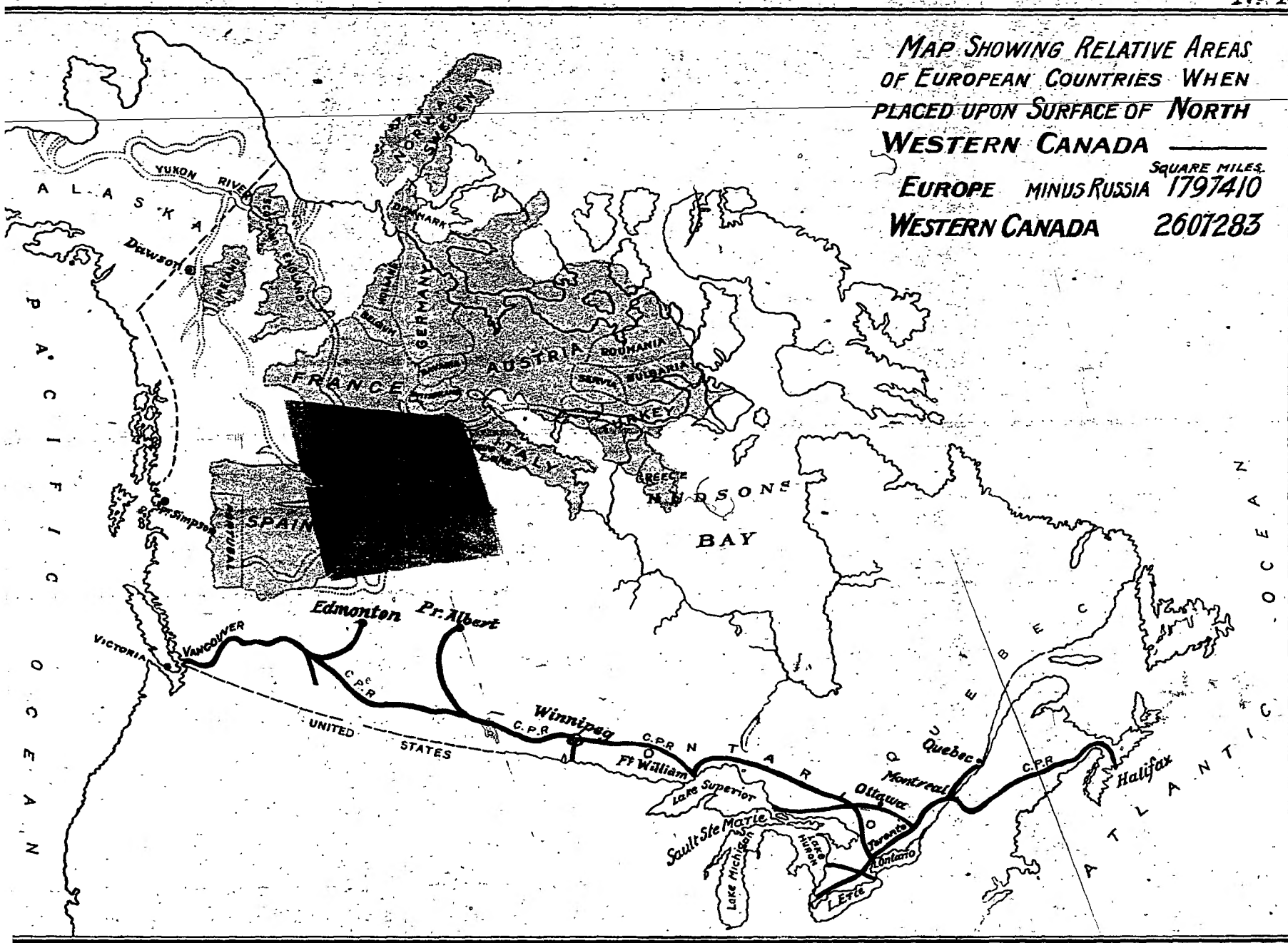


MAP OF
CANADIAN TERRITORY
COMMERCIALLY TRIBUTARY TO THE TRANSPORTATION SYSTEM
OF THE
HUDSON BAY AND NORTH-WEST RAILWAYS COMPANY
1904
OCEAN
Dawson
Pelly R.
Lewes R.
Teslin R.
Mackenzie River
Great Bear Lake
Great Slave
Liard R.
No 2
PREMIUM WHEAT AREA
Ft. Smith
Lake Athabasca
No 1
Peace R.
Ft. Vermillion
Hay R.
Finlay R.
Parsnip R.
Portland Canal.
Port Simpson
Edmonton
A. Ry. Landing
L. Mackay
L. Aylmer
Clinton-Golden L.
Artillery L.
Ft. Rae
H.B.&N.W.Ry.
S. Thelon R.
Dubawnt R.
Lake Dubaunt
Thelon River
Height of Land "Great Basin divide"
Chesterfield Inlet
Southampton I.
HUDSON BAY
Black L.
Reindeer Lake
Cree L.
Churchill R.
Nelson R.
Severn R.
Albany River
Moose R.
Great Whale
Richmond
NIPEG
Mt. St. Elias


MAP OF
CANADIAN TERRITORY
COMMERCIALLY TRIBUTARY TO THE TRANSPORTATION SYSTEM
OF THE
HUDSON BAY AND NORTH-WEST RAILWAYS COMPANY
1904
No 2
Coronation Gulf
Height of Land "Great Basin divide"
Southampton I.
Bell I.
Coats I.
Mansfield I.
Chesterfield Inlet
Thelon River
L. Mackay
L. Aylmer
Thelon R.
Clinton-Golden L.
Artillery L.
Lockhart R.
H.B.& N.W. Ry.
Lake Baker
Ft. Rae
Great Slave Lake
S. Thelon R.
Dobaunt R.
HUDSON BAY
Richmond Gulf
WHEAT AREA
Ft. Smith
Lake Athabasca
Peace R.
No 1
Black L.
Cree L.
Reindeer Lake
Churchill R.
Nelson R.
Severn R.
Great Whale
Lesser Slave Lake
A. Ry Landing
Edmonton
LAKE WINNIPEG
Albany River
Moose R.
Moose Ft.
200 Miles = 1 Inch
0
200
500
Table of Distances.
by Ocean Steamer — Miles.
Chesterfield to Liverpool 2816
R. Churchill 2966
Albana Riv. 3010
Montreal 2841
New York 3130
Via C. Inlet to Divide Ry. Riv. Steamer 400
D. Ry. to Gt Slave Lake Railway 200
G.S.L. Ry. Terminal to Slave R. 250
Peace R. 470
"by Lake Steamers" Liard R. 530
Arctic Ocean 1500
Yukon Divide Railway 40
Y.D.Ry to Dawson Riv. Steamer 500
Edmonton to Montreal C.P.Ry. 2459
Montreal to Glasgow 2740
Peace Riv. 3785
Edmonton Via C.P.Ry. 5199
GREENLAND
ARCTIC OCEAN
ATLANTIC OCEAN
NORWAY
SWEDEN
FINLAND
RUSSIA
GERMANY
AUSTRIA
FRANCE
SPAIN
AFRICA
ICELAND
UNITED STATES
ALASKA
CANADA

Nº3.


A MAP OF CANADA
SHOWING THE BOUNDARIES
OF THE
PROVINCES AND TERRITORIES
AND LIMITS OF CULTIVATION.
ALASKA
YUKON R.
YUKON
AREA
196976 SQ.M.
Dawson
MACKENZIE
AREA
SQ.M.
FRANKLIN
AREA
500000 SQ.M.
KEEWATIN
AREA
BRITISH COLUMBIA
AREA
372630 SQ.M.
Liard R.
Peace R.
ATHABASKA
AREA
251965
SQ.M
Athabasca
Agriculture
Limit
ALBERTA
AREA
SQ.M
Edmonton
Calgary
SASKATCHEWAN
AREA
Prince Albert
ASSINIBOIA
AREA
88879 SQ.M.
Regina
MANITOBA
AREA
73732 SQ.M.
C.P.R.
WINNIPEG
UNITED
STATES
HUDSON
BAY
UNGAVA
AREA
354961 SQ.M.
LABRADOR
QUEBEC
AREA
351873 SQ.M.
Cultivation
Wheat
ONTARIO
AREA
260864 SQ.M.
Nelson R.
Ft. William
Lake Superior
Sault Ste Marie
Lake Michigan
Lake Huron
L. Erie
Toronto
Ontario
Ottawa
Quebec
MONTREAL
NEW BRUNSWICK
NOVA SCOTIA
HALIFAX
Victoria
VANCOUVER
Pt. Simpson
Fraser R.
PACIFIC OCEAN
ATLANTIC OCEAN


MAP SHOWING RELATIVE AREAS
OF EUROPEAN COUNTRIES WHEN
PLACED UPON SURFACE OF NORTH
WESTERN CANADA
SQUARE MILES.
EUROPE MINUS RUSSIA 1797410
WESTERN CANADA 2607283
ALASKA
YUKON RIVER
Dawson
PACIFIC OCEAN
NORWAY
SWEDEN
DENMARK
GERMANY
FRANCE
AUSTRIA
HUNGARY
SERVIA
BULGARIA
TURKEY
ITALY
GREECE
SPAIN
PORTUGAL
Ft Simpson
HUDSONS BAY
Edmonton
Pr Albert
VICTORIA
VANCOUVER
C.P.R
UNITED STATES
Winnipeg
Ft William
Lake Superior
Sault Ste Marie
Lake Michigan
Lake Huron
Toronto
Ontario
Lake Erie
Ottawa
Montreal
Quebec
Halifax
ATLANTIC OCEAN

Momentous Announcement

CHEAPER, GREATER,
BETTER, SAFER

BREAD SUPPLY IN SIGHT FOR THE UNITED KINGDOM

IDEAL HOMES FOR COLONISTS

WITHOUT USUAL

PIONEER PRIVATIONS, RISKS AND ISOLATIONS

ALL BEING AVOIDED BY

UNPRECEDENTEDLY FAVORABLE CO-OPERATIVE METHODS "IN THE GARDEN"

OF THE

DOMINION OF CANADA